

## Development of method for evaluation of apple resistance and *Venturia inaequalis* virulence *in vitro*

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The apple scab caused by *Venturia inaequalis* (Cooke) G. Winter is an economically important disease worldwide. The economic losses can reach up to 70 % of the production value in the case of insufficient control of the disease by fungicide sprays in combination of susceptible cultivars. The evaluation of apple cultivar resistance to scab or virulence of the pathogen usually is performed by inoculating plants in the greenhouse or scoring of the disease in the orchards under natural infection conditions. Both methods have restrictions, such as screening of combinations of larger numbers of plant and pathogen genotypes is limited; quantification and characterization of the pathogen in the field is not possible. Therefore attempts were made to develop the method for initial screening of apple genotype resistance to *Venturia inaequalis* and for evaluation of the pathogen's virulence *in vitro* by inoculating detached leaves, immature fruits and young shoots. Nineteen apple genotypes and 12 *Venturia inaequalis* isolates originated from different host genotypes and locations in Latvia were used in the experiments. Microscopic and macroscopic tissue reactions were monitored during the experiments. Susceptible and resistant interactions were observed during the experiments in various host genotype and pathogen combinations. Variability among *Venturia inaequalis* isolates on different host genotypes was also detected.

**Keywords:** apple scab, genotypes, resistance, virulence